

\* WHAT IS CLAIMED IS:

1. A UTOPIA (Universal test and operations PHY interface for ATM) interface control method of connecting an Asynchronous Transfer Mode (ATM) layer function to a physical (PHY) layer function at UTOPIA level 2, said method comprising the steps of:

disposing N groups of 32 PHY layer functions according to a number of UTOPIA addresses;

10 simultaneously controlling transmission of a UTOPIA address between said ATM layer function and said N groups of 32 PHY layer functions;

individually controlling transmission of a cell available signal between said ATM layer function and each of said N groups of 32 PHY layer functions; and

individually controlling transmission of an enable signal between said ATM layer function and each of said N groups of 32 PHY layer functions.

20 2. A UTOPIA interface control device for connecting an ATM layer function to a PHY layer function at UTOPIA level 2, said device comprising:

N groups of 32 PHY layer functions disposed according to a number of UTOPIA addresses;

25 a means connected between said ATM layer function and said N groups of 32 PHY layer functions, for allowing said ATM layer function to simultaneously deliver a UTOPIA address to said N groups of 32 PHY layer functions;

a means connected between said ATM layer function and each of said N groups of PHY layer functions, for allowing each of

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\* said N groups of 32 PHY layer functions to deliver a cell available  
signal to said ATM layer function; and

a means connected between said ATM layer function and each  
of said N groups of 32 PHY layer functions, for allowing said  
5 ATM layer function to deliver an enable signal to each of said  
N groups of 32 PHY layer functions.

3. The UTOPIA interface control device according to Claim  
2, wherein said ATM layer function has a priority processing  
10 function of performing predetermined priority processing in  
Quality of Service (QoS) classes when transmitting cells, and  
includes a transmission order determination means for assigning  
priorities to said N groups of 32 PHY layer functions so as to,  
when two or more of said N groups of 32 PHY layer functions assert  
15 their cell available signals with an identical UTOPIA address,  
give a higher priority to transmission of cells to ones of said  
two or more groups of 32 PHY layer functions which will receive  
constant bit rate (CBR) traffic than to transmission of cells  
to a remainder of said two or more groups of 32 PHY layer functions  
20 which will receive unspecified bit rate (UBR) traffic.

4. The UTOPIA interface control device according to Claim  
2, wherein said ATM layer function has a priority processing  
function of performing predetermined priority processing in QoS  
25 classes when transmitting cells, and includes a transmission  
means for, when two or more of said N groups of 32 PHY layer  
functions assert their cell available signals with an identical  
UTOPIA address and cells to be transmitted to said two or more  
groups of PHY layer functions are associated with such identical  
30 traffic as CBR or UBR traffic, transmitting cells to said two

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\* or more groups of PHY layer functions in rotation in order of  
descending priorities assigned to them in advance.

5 4. The UTOPIA interface control device according to Claim  
4, wherein numbers indicating priority which decreases in  
ascending order of numbers are assigned to said N groups of 32  
PHY layer functions, and said transmission means transmits cells  
to said two or more groups of 32 PHY layer functions in rotation  
according to the numbers.

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6. The UTOPIA interface control device according to Claim  
4, wherein numbers indicating priority which increases in  
ascending order of numbers are assigned to said N groups of 32  
PHY layer functions, and said transmission means transmits cells  
15 to said two or more groups of 32 PHY layer functions in rotation  
according to the numbers.

7. The UTOPIA interface control device according to Claim  
3, wherein said ATM layer function includes a transmission means  
20 for, when two or more of said N groups of 32 PHY layer functions  
assert their cell available signals with an identical UTOPIA  
address and cells to be transmitted to said two or more groups  
of PHY layer functions are associated with such identical traffic  
as CBR or UBR traffic, transmitting cells to said two or more  
25 groups of PHY layer functions in rotation in order of descending  
priorities assigned to them in advance.

8. The UTOPIA interface control device according to Claim  
7, wherein numbers indicating priority which decreases in  
30 ascending order of numbers are assigned to said N groups of 32

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\* PHY layer functions, and said transmission means transmits cells  
to said two or more groups of 32 PHY layer functions in rotation  
according to the numbers.

5           9. The UTOPIA interface control device according to Claim  
7, wherein numbers indicating priority which increases in  
ascending order of numbers are assigned to said N groups of 32  
PHY layer functions, and said transmission means transmits cells  
to said two or more groups of 32 PHY layer functions in rotation  
10 according to the numbers.

10. A back wiring board for use in a UTOPIA interface control  
device for connecting an ATM layer function to a PHY layer function  
at UTOPIA level 2, said back wiring board comprising:

15           a line connected between said ATM layer function and N  
groups of 32 PHY layer functions disposed according to a number  
of UTOPIA addresses, for allowing said ATM layer function to  
simultaneously deliver a UTOPIA address to said N groups of 32  
PHY layer functions;

20           a line connected between said ATM layer function and said  
N groups of 32 PHY layer functions, for allowing said ATM layer  
function to simultaneously deliver data to said N groups of 32  
PHY layer functions;

25           a line connected between said ATM layer function and each  
of said N groups of 32 PHY layer functions, for allowing each  
of said N groups of 32 PHY layer functions to deliver a cell  
available signal to said ATM layer function; and

30           a line connected between said ATM layer function and each  
of said N groups of 32 PHY layer functions, for allowing said  
ATM layer function to deliver an enable signal to each of said

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' N groups of 32 PHY layer functions.

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